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NPTEL

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Courses » Engineering Mathematics - I

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## Unit 7 - Week 5 :

Register for  
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### Course outline

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Improper  
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## Assignment 5

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment. **Due on 2019-03-06, 23:59 IST.**

1) The integration  $\int_0^{\infty} x^3 e^{-x^2} dx$  1 point

- a. is equal to 0
- b. is equal to  $\frac{1}{2}$
- c. is equal to  $e^{-1}$
- d. does not converge

- (a)
- (b)
- (c)
- (d)

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

(b)

2) Which of the options is/are true for the integral  $\int_1^{\infty} \frac{1}{x \ln x} dx$  ? 1 point

- a. Integral converges
- b. Integral does not converge
- c. The value of the integration is  $e$
- d. The value of the integration is 1

- (a)

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Week 7 :

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ce De

Accepted Answers:

(b)

3)

1 point

Which of the options is/are true for the integral  $\int_1^{\infty} \frac{1}{\sqrt{x}(1+x)} dx$  ?

- a. Integral converges
- b. Integral does not converge
- c. The value of the integration is  $\pi$
- d. The value of the integration is  $\frac{\pi}{2}$

- (a)
- (b)
- (c)
- (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a)

(d)

4)

1 point

Which of the options is/are true for the integral  $\int_0^2 \frac{1}{\sqrt{x}(2-x)} dx$  ?

- a. Integral converges
- b. Integral does not converge
- c. The value of the integration is  $\pi$
- d. The value of the integration is  $\frac{\pi}{2}$

- (a)
- (b)
- (c)
- (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a)

(c)

5)

1 point

The integral  $\int_0^{\infty} \frac{1 - \cos x}{x^2} dx$  is convergent.

Check whether the above statement is true or false.

- a. True  
b. False

- (a)  
 (b)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a)

6)

The integral  $\int_0^{\frac{\pi}{2}} \log(\sin x) dx$  is convergent.

Check whether the above statement is true or false.

- a. True  
b. False

- (a)  
 (b)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a)

7)

The integral  $\int_1^{\infty} \frac{e^x}{\sqrt{x^2 - \frac{1}{2}}} dx$  is convergent.

Check whether the above statement is true or false.

- a. True  
b. False

- (a)  
 (b)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(b)

8)

1 point

1 point

1 point

Which of the options is/are true for the integral  $\int_0^{\infty} (1 + 2x)e^{-x} dx$  ?

- a. Integral converges
- b. Integral does not converge
- c. The value of the integration is 3
- d. The value of the integration is  $-3$

- (a)
- (b)
- (c)
- (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a)

(c)

9)

Which of the options is/are true for the integral  $\int_{-\infty}^0 \frac{e^x}{x^2} dx$  ?

1 point

- a. Integral converges
- b. Integral does not converge
- c. The value of the integration is  $-5$
- d. The value of the integration is 1

- (a)
- (b)
- (c)
- (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a)

(d)

10)

Fill in the blank with appropriate option:  $B(m + 1, n) = \underline{\hspace{2cm}} B(m, n)$ .

1 point

- a.  $m + 1$
- b.  $m + n$
- c.  $\frac{m}{m+n}$
- d.  $\frac{m-n}{m+n}$

- (a)
- (b)
- (c)

(d)

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

(c)

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